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SPECIES AND SIZES OF STOCK FOR PLANTING IN NORTHWESTERN PENNSYLVANIA 2.541

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The grading of forest planting stock is important in getting good survival and rapid height growth in plantations. This is especially true on poor planting sites where the young tree needs every possible advantage to survive.

Recent analyses of test plantations on the Allegheny National Forest and adjacent lands showed a survival after five years of 90% for medium sized and large red pine stock as against 76% for the small stock on sites subject to severe frost heaving. This small stock lost $12\frac{1}{2}\%$ from frost heaving the first year as compared to only $6\frac{1}{2}\%$ for the large stock. Heights at the end of five years were 1.8 feet for small, 2.3 feet for medium and 2.9 feet for large stock.

Graded (1-0) yellow poplar and black cherry on other sites showed similar results. Five years after planting the large yellow poplar stock was just under a foot in height; the small stock only 6 inches tall. The large black cherry stock was 1.2 feet tall and the small stock only .7 foot. Where frost injury was a factor losses of small black cherry the first year were 57% due to this cause. Losses on the large stock were only 12%.

Black locust stood out as a good bet on difficult planting sites. On dry south slopes where deer damage was serious and a previous red pine plantation had failed, black locust had a 70% survival after five years and was relatively undamaged. Due to its ability to sprout after browsing, pitch pine had almost 60% survival, but was low and bushy in form. Scotch pine, jack pine and red pine were failures.

A light cover of aspen and fire cherry seemed to favor height growth of planted white spruce, as evidenced by an average height of 1.7 feet in the open and 1.9 feet under the aspen and cherry.

*In cooperation with the University of Pennsylvania.

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